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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/071,748 | 02/08/2002 | Noah Nicholson | 017201-045900US | 2982 |

20350 7590 01/23/2004

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EXAMINER

FIORILLA, CHRISTOPHER A

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| ART UNIT | PAPER NUMBER |
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1731

DATE MAILED: 01/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,748

Applicant(s)

NICHELSON ET AL.

Examiner

Christopher A. Fiorilla

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 13-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. Applicant's election without traverse of Group I, claims 1-12 in Paper dated 10/27/03 is acknowledged.

2. Claims 13-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper dated 10/27/03.

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

4. The abstract of the disclosure is objected to because it does not recited the steps of the claimed process. Correction is required. See MPEP § 608.01(b).

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5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed (i.e. the elected method).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Andersen (2,938,807).

8. Claims 1 and 6 are rejected under 35 U.S.C. 10b) as being anticiapted by Chwastiak et al. (5,643,514).

Chwastiak et al. teaches the manufacture of a SiC body by mixing a carbon source, silicon carbide, an organic gelation agent and a liquid to form a slurry; compacting the slurry into a green body; and exposing the green body to liquid silicon metal to produce a reaction bonded silicon carbide body. See cols. 4 and 5.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-4,7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen (2,938,807) in view of Waggoner et al. (2003/0180579).

Note that Andersen discloses that the SiC grit is hexagonal which indicated it is an alpha polytype as recited in claim 2.

Andersen discloses that the carbon source may be "graphite, amorphous carbon, or some other type of free carbon" which is inclusive of carbon black as recited in claim 2.

Determination of the specific ingredient amounts would have been well within the realm of routine experimentation to one having ordinary skill in the art at the time of the invention. These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product.

Waggoner et al. discloses that SiC ceramics are suitable for armor paragraph [0095]. It would have been obvious to one skilled in the art at the time of the invention to use the material of Andersen for armor in view of the teaching of Waggoner.

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12. Claims 1-3 and 6-12 are rejected under 35 U.S.C. 103(a) as being obvious over Chwastiak et al. (5,643,514) in view of Waggoner et al. (2003/0180579).

Chwastiak et al. teaches the manufacture of a SiC body by mixing a carbon source, silicon carbide, an organic gelation agent and a liquid to form a slurry; compacting the slurry into a green body; and exposing the green body to liquid silicon metal to produce a reaction bonded silicon carbide body. See cols. 4 and 5. Chwastiak et al. also discloses the claimed siliconization temperatures (col. 5, line 2). Chwastiak et al. also disclose a porous mold (i.e filter paper) and the application of pressure to the slurry. See example 1.

Determination of the specific ingredient amounts, mold configuration, molding pressures and process step times would have been well within the realm of routine experimentation to one having ordinary skill in the art at the time of the invention. These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product.

Waggoner et al. discloses that SiC ceramics are suitable for armor paragraph [0095]. It would have been obvious to one skilled in the art at the time of the invention to use the material of Andersen for armor in view of the teaching of Waggoner.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chwastiak et al. (5,643,514) in view of Waggoner et al. (2003/0180579) as applied to claims 1-3 and 6-12 above, and further in view of Andersen (2,938,807)

Andersen discloses that methylcellulose is a water soluble binder suitable for the production of reaction bonded silicon carbide bodies (col. 3, lines 54-66). It would have been

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obvious to one skilled in the art at the time of the invention to use methylcellulose binder in the process of Chwastiak et al. in view of the teaching therein that "other water soluble binders" are suitable for use (col. 4, lines 54-56).

14. Claim 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chwastiak et al. (5,643,514) in view of Waggoner et al. (2003/0180579) as applied to claims 1-3 and 6-12 above, and further in view of Benker.

Benker discloses that potato starch is a water soluble binder suitable for the production of silicon carbide bodies. It would have been obvious to one skilled in the art at the time of the invention to use potato starch in the process of Chwastiak et al. in view of the teaching therein that "other water soluble binders" are suitable for use (col. 4, lines 54-56).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Fiorilla whose telephone number is (571) 272-1187. The examiner can normally be reached on M-F, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Christopher A. Fiorilla
Primary Examiner
Art Unit 1731

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